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The mobilization of support data and documentation sufficient to give appropriate physical expression to the required functions of the new senior high school, in Green Bay, Wisconsin, is the objective of this report. The consultants have proceeded in two steps--(1) to identify the functions to be performed in the new high school by analyzing records, interviewing school officials, department heads, and other personnel, and submitting questions to the city-wide steering committee, and (2) to identify relationships of staff, equipment, and space for the performance of these functions. Areas dealt with include--(1) philosophy and objectives of education, (2) curriculum, (3) student activities and services, (4) curricular organization, (5) program of studies, (6) student body, (7) staff needs, (8) function relationships, (9) space allocations budget, and (10) proximity of functional areas. General facilities, instructional and administrative facilities, outdoor facilities and special considerations are discussed. Special considerations include--(1) visual openness, (2) corridors and circulation, (3) relocatable and movable walls, (4) carpeting, (5) exterior glass, (6) furniture and equipment, (7) toilets, (8) color and finishes, (9) illumination, (10) acoustics, (11) temperature, and (12) general considerations. (RK)

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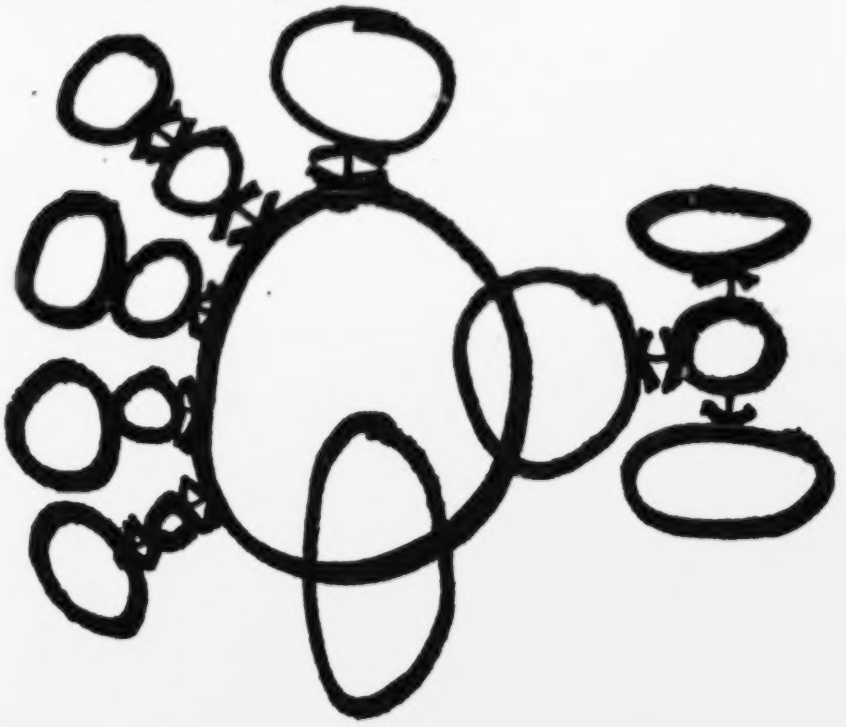
BASIS FOR DESIGN DEVELOP-MENT



NEW SENIOR HIGH SCHOOL
GREEN BAY, WISCONSIN

EF 002510

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Facilities Programming for a New Senior High School in the City of Green Bay

BASIS FOR DESIGN DEVELOPMENT

prepared by:
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Madison, Wisconsin
April 1968

Introduction

The objective of this report is the mobilization of support data and documentation sufficient to give appropriate physical expression to the required functions of the new school.

It is hoped that this report will be of most assistance by stimulating further thought and concern for detail in the expression of the general space and facilities requirements outlined on the following pages.

The consultants have proceeded in two steps. The first step was to identify the functions to be performed in the new high school by analyzing records, interviewing school officials, department heads, and other personnel, and submitting questions to a city-wide steering committee. The second step was to identify relationships of staff, equipment, and space for the performance of these functions.

Sources of Information

Information needed or useful in the project was obtained from the following sources:

1. Personal contacts within the Green Bay School District:

   a. Edwin B. Olds, Superintendent
   b. Reynold A. Swanson, Assistant Superintendent
   c. Jerome McCormick, Director of Secondary Education
   d. Philip Gates, Principal, and members of the staff of Southwest High School
   e. Nick Dallich, Supervisor of Buildings
   f. District-wide steering committee

2. Publications found in the attached list of references

3. Special visits

   a. To Evanston Township High School, Evanston, Illinois
   b. To Winona High School, Winona, Minnesota

Background Information

The location of Green Bay at the mouth of the Fox River has been of strategic commercial importance for centuries. Various enterprises and industries have sprung up at that location, creating varied needs for vocational skills and trades. The public schools of Green Bay have striven historically to prepare students for entrance into these occupations, as well as into higher education. Consequently, the educational program, particularly in the high schools, has been comprehensive in character. Over the years, the percentage of high school graduates remaining and working in Green Bay has steadily increased. With the establishment of the University of Wisconsin four-year campus, that percentage should rise much higher.

The current and projected organization of secondary education is 3-3, with three years of study allocated to junior high school education and three to senior high school. Under this system, the latter is more specialized, career oriented, and composed of more options or choices of study.

Philosophy and Objectives of Education

A statement of the philosophy and objectives of Southwest High School was prepared early last year. This statement reads as follows:

A. Education is a process of continual growth throughout the lives of individuals....

B. It is the aim of this school to provide a flexible program of educative experiences to youth....

C. We believe that an effectively-educated citizen:

1) is competent in mastering of tools of learning
2) accepts obligations as well as rights
3) uses resources wisely
4) has learned to think critically
5) appreciates his heritage
6) recognizes value of continuing education
7) participates in a democratic way
8) has a set of values
9) respects others
10) is emotionally stable
11) is developing vocational competence
12) is developing physical well-being

These objectives reveal the comprehensiveness of the educational task envisaged and reflect accurately the character and intentions of the community. They are, therefore, valid for the contemplated new facility.

Curriculum

There are eleven divisions of the curriculum, namely, art, business and distributive education, foreign language, homemaking, industrial arts, language arts, mathematics, music, physical, health and driver education, science, and social studies. In addition, special education is provided for mentally handicapped students.

Art instruction includes a wide range of experiences and knowledge in every medium of expression associated with it. The instruction is individualized to a large extent, with some small and standard group instruction interspersed.

Business and distributive education are joint interests but are now pursued somewhat separately. The former covers such subjects as typing, shorthand, general business, bookkeeping and accounting, and business law. The latter is built around special programs of combined work and study and includes such subjects as selling and merchandising as well as the other business subjects.

Foreign language would include four years each of Spanish, French, German, and Latin. Study in Russian may be added.

Homemaking would provide a course of study in each of the three years of senior high school. The principal subjects would include those associated with cooking and sewing, as well as an understanding of child development and care.

Industrial arts includes work in woods, plastics and metals, the study of power and electricity, related engineering drawing, and graphic arts. A question is unanswered at this point regarding the organization of vocational education in the high schools of the system. If system-wide specialization of facilities is adopted, certain spaces may be provided in the new school to serve all students in the district who would elect these courses. Other vocational shops would be located elsewhere.

Language arts instruction would be carried on with every student each year. The extent of that exposure would vary from student to student and the subject matter is packaged in much smaller sizes than conventional year-long or semester-long courses.

Mathematics instruction is sequential in nature and includes work through differential calculus. Also, work in applied mathematics is offered for those who prefer to broaden their knowledge of the subject rather than pursue it in depth.

The music program would be essentially large group and individualized instruction in each of the two areas: vocal and instrumental. The latter is divided between band and orchestra.

Physical and health education requires space which is useful in a large number of different physical activities. The physical education program is exploratory in character, with respect both to individual coordination and skill and group or team activity. At the present time, physical education is required of all students who do not have a medical excuse.

All three broad areas of science instruction, namely, biology, physics, and chemistry, are included in the program. Nationally-designed curricula are used in each subject. The emphasis is on lab work and on reducing the size of groups engaged in that work. About 85% of students study biology but a smaller number study either of the remaining two. Exploratory study in a number of other sciences such as geology and meteorology is included.

Social studies includes history and certain of the social sciences such as psychology, economics, and sociology. The intent is to foster the development of both skills and knowledge in the social sciences. Substantial use is made of large group instruction and small seminar-type discussion groups.

Generally, new curricular developments will not alter the commitment to comprehensive high schools. Specialization of vocational education among high schools, if it develops, will be prompted by the high costs of certain specialized facilities such as electronics shops and data processing labs.

The intention is to prescribe fewer requirements for students and expand their range of choice. The program of studies offered to sophomores, juniors, and seniors listed in the Trojan Guide for 1967-68, is shown on the following page.

Student Activities and Services

Existing student activities at Southwest High School include student government, special interest clubs, athletics, forensics, and publications. It is assumed these activities will be continued in the new facility. Except for athletics, none occupies space designed primarily for that activity.

Curricular Organization

A modular schedule will be used in the new Southwest High School. It consists of 20 periods of 20 minutes each per day or 100 "modules" per week. In addition, varied sizes of student groups are formed from time to time to suit instructional occasions. Teachers plan for a single module or multiples of the module to be used for each instructional mode. The ensuing schedule is computer created and

SOUTHWEST HIGH SCHOOL — PROGRAM OF STUDIES - GRADES 9-12 — GREEN BAY, WISCONSIN

REQUIRED	ACADEMIC	BUSINESS EDUCATION	PRACTICAL ARTS	FINE ARTS
FRESHMAN				
Language Arts I Se. Math 92 or Alg. 99 or Geom. 109 Soc. Science Phy. Ed. - Health	Latin French Spanish BSCS Biology General Science	General Business	Homemaking I Mech. Drafting (one sem.) and Metals (one sem.)	Art I Band Chorus Orchestra
SOPHOMORE *Language Arts II Math 93 or Alg. 99 or Geom. 109 Phy. Ed. and Dr. Educ. Amer. History I	Latin French German Spanish BSCS Biology		Homemaking I Homemaking II Mechanical Drafting Woodworking I Graphic Arts I	Art II Band Chorus Orchestra
JUNIOR				
*Language Arts III American History II Phy. Ed.	Latin French German Spanish Chemistry Inter. Math 119	Shorthand I Typing I General Business Bookkeeping Distribution I	Homemaking II Mechanical Drafting Machine Shop I Woodworking I or II Machine Drafting Metal Fabrication	Art III Band Chorus Orchestra
SENIORS				
Language Arts IV Economics-Psychology or Basic Econ.-Soc. Phy. Ed.	Latin French German Spanish Chemistry Physics Adv. Math 129 Seminar	Distribution II Bookkeeping General Business Vocational Shtd. - Typing II Shorthand I Typing I Clerical Practice	Homemaking III Homemaking Survey Mechanical Drafting Woodworking I or II Machine Shop I Architectural Drafting Metal Fabrication Metal Technology-Machine II Graphic Arts II	Art IV Band Chorus Orchestra

* 1 Sem. Required of Basic Speech and Development Reading 1 Sem Required of Development Writing
11 Sem. Elected from the following: 1. American Short Story 2. American Novel 3. Drama 4. British Literature

monitored. Changes are made frequently. The abandonment of the standard unit of time or of subject matter and the frequency of revision produce flexibility. Moreover, the rapid and relatively effortless shift from one instructional mode to another and from one size of group to another will be an essential requirement of the flexibility. This will be especially important in the language arts, mathematics, foreign language, and social studies instructional areas. The pressure for this kind of flexibility comes from the need to make changes daily in the schedule.

The Student Body

According to school officials, the students who will attend the new Southwest High School are representative of the entire school district--i.e., their background characteristics and abilities are approximately those of the total pupil population. About 35% are college bound system-wide and this ratio is not expected to change drastically. The new facility will have a capacity of 1,800 in grades 10 - 12.

Staff Needs

The staff needs in the new facility are based on the current pattern at Southwest High School and the projected expansion. By subject and service areas, they are anticipated to be as follows:

	Prof	PP	IS	Other
Art	2			
Business-Vocational Education	6		1	
Foreign Language	5		1	
Homemaking	1	1		
Industrial Arts	6	2		
Language Arts	16	2	2	
Mathematics	6	2	1	
Music	3			
Physical and Health Education	4			
Science	6	1	1	
Social Studies	12		2	
Special Education	3			
Guidance	4			1
Administration	3			3
Custodial				4
	77	8	8	8

Function Relationships

Interviews with present faculty established relationships of dependence and desirability of association through proximity to other program functions or special facilities in a high school program.

The following summary matrix chart entitled "Proximity of Functional Areas" relates desired functional area linkages as expressed by departmental representatives. The diagram entitled "Functional Relationships Diagram" then relates all of the expressed functions to one another. Arrows are drawn from the department expressing the desired proximity affiliation. Program functions are enclosed in ellipses while special facilities are identified in rectangular blocks.

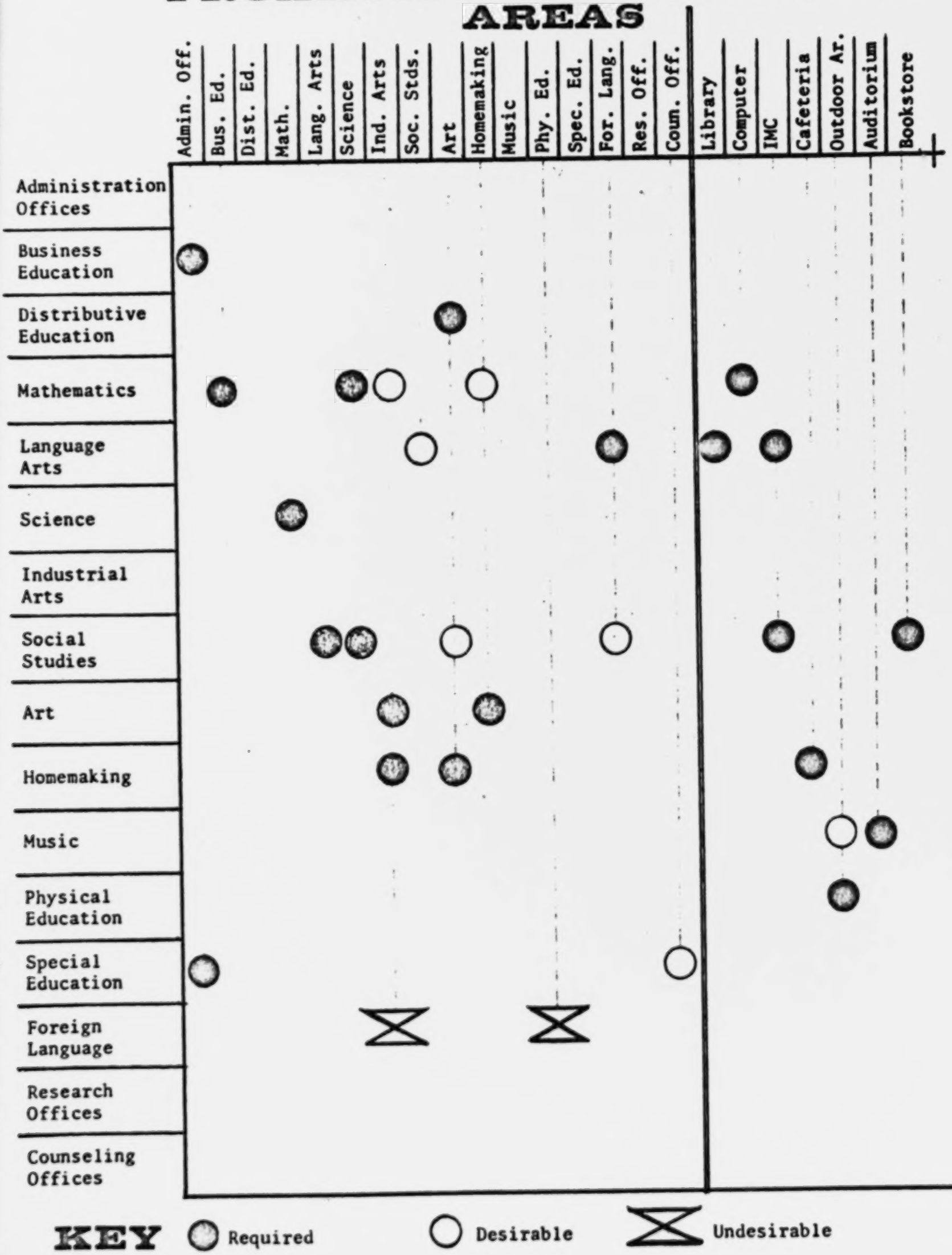
The Summary Functional Relationships Diagram reflects the second stage of development of proximity and functional relationships necessary to implement the Centralized Instructional Materials Center concept to which the Green Bay school system is committed.

Space Allocations Budget

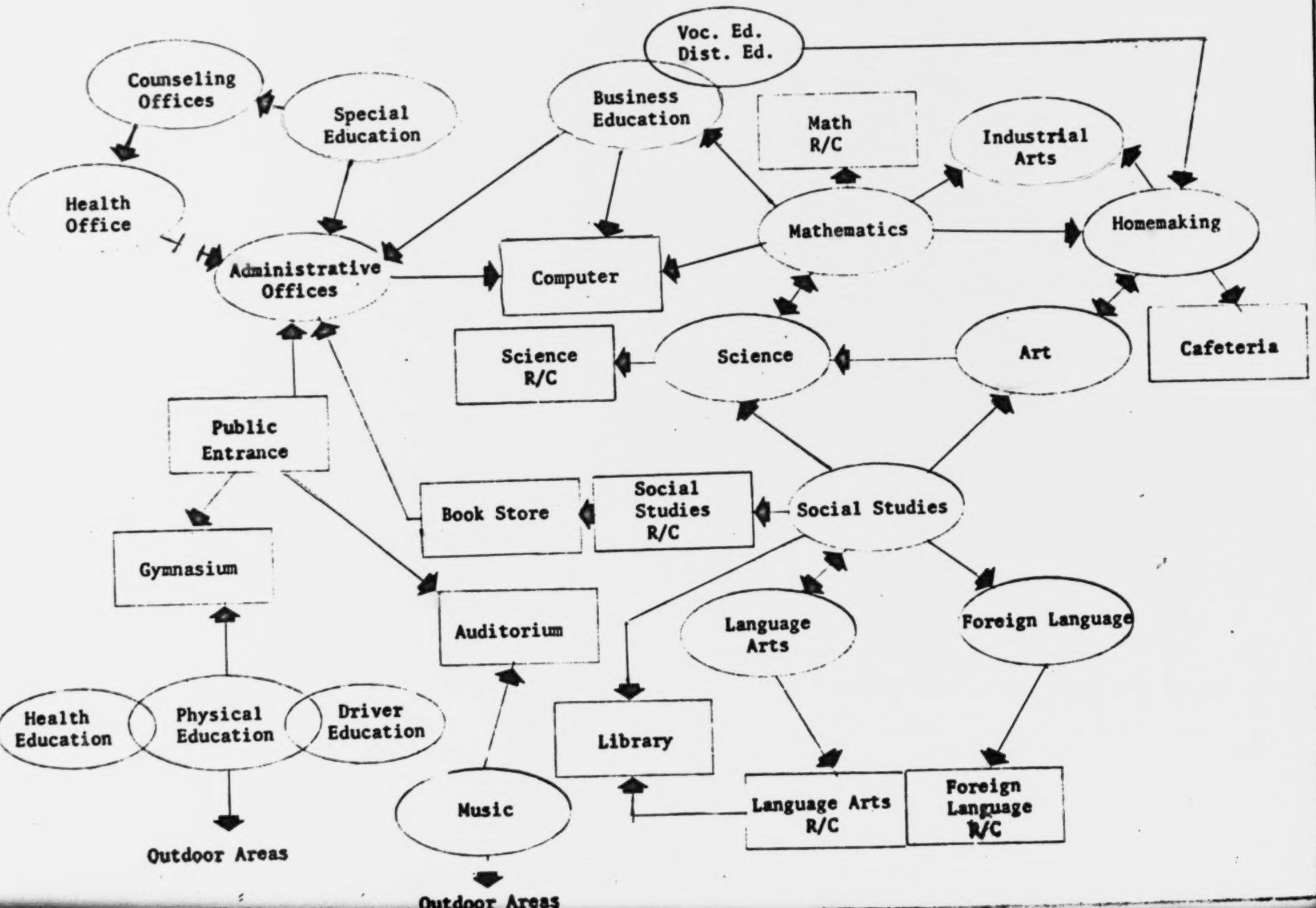
For purposes of establishing the estimated amount of building which could reasonably be constructed from funds available for the project, the following procedure was used:

Total Project Funds Available		5,000,000
Land Acquisition	100,000	
Movable Equipment	400,000	
Site Development (playfields, track, parking, driveways, etc.)	100,000	
Fees (6% of 4.5 million)	270,000	
Available for Building Construction and Fixed Equipment		4,130,000
Gross Space @ $18 s.f.		229,445 s.f.
Net Assignable Space @ 65%		149,140 s.f.
Estimated Net Assignable Space Allocated to General Facilities		41,220 s.f.
Net Assignable Space Remaining		107,920 s.f.

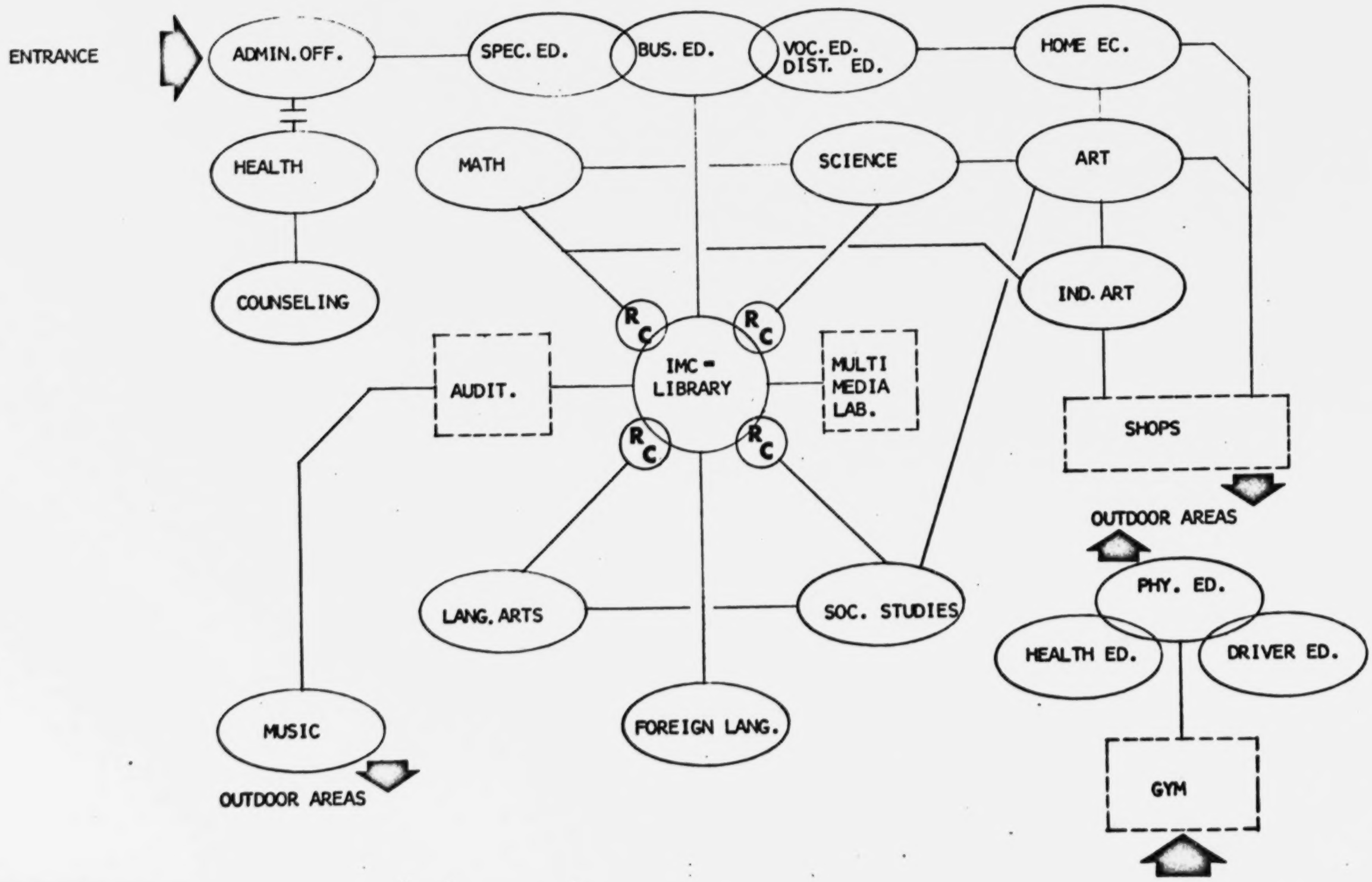
PROXIMITY of FUNCTIONAL AREAS



FUNCTIONAL RELATIONSHIPS DIAGRAM



FUNCTIONAL RELATIONSHIPS - SUMMARY

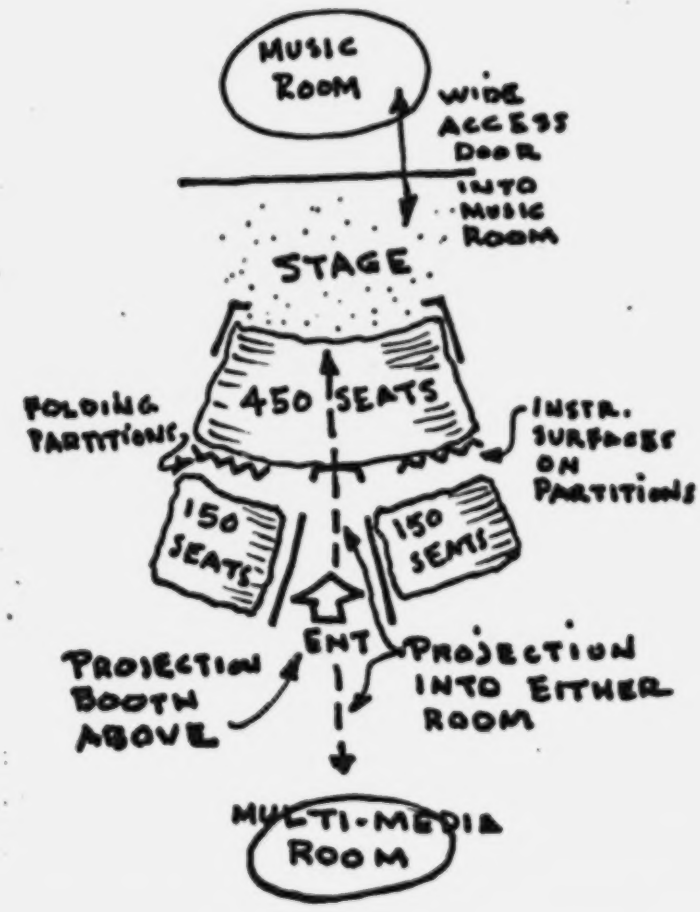


GENERAL FACILITIES

Auditorium
Commons
IMC - Library
Multi-Media Instructional Center

Auditorium
(12,500 s.f.)

This unit is intended to be used in several ways: for public events, assemblies, musical and dramatic performances, motion picture presentations, and large group instruction. It should have a seating capacity of 750 persons and be divisible into three sub-spaces seating 450, 150, and 150 respectively, with acoustic separation of STC 40 or above. These three sub-spaces should have acceptable exits and entryways which are independent of the other sub-spaces.

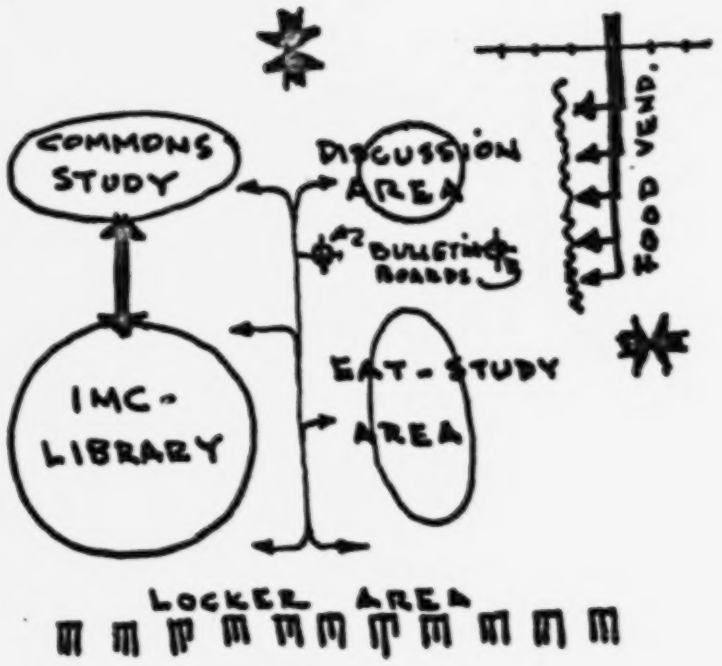


The stage area should be large enough to seat a 100-piece band or orchestra and should be accessible from the music suite nearby. It should have a large door which opens to the outside for the movement of stage scenery and furniture. At one side of the stage, two dressing rooms and a toilet should be located; at the other side, a stage properties storage room.

A properly insulated projection booth should be located above the entrance to the auditorium, with an access stairway from the corridor. This booth should have full lighting control and motion picture projection capabilities.

Commons
(12,720 s.f.)

This unit is intended for vended food service, for students' individual study, and a congregating area for special programs and bus loading and unloading. It should contain combined table-chair and step seating for a capacity of 600 students in a ratio of 2:1--i.e., 400 at tables and chairs and 200 on step seating.



Banks of vending machines and student storage lockers should be placed along one wall, with the latter providing expansion space for vended food service if needed. Certain vending units will require servicing from the rear while others may be re-stocked from the front. The exit to a covered bus ramp should be in a glass-paneled exterior wall. The IMC-Library should be located adjacent to the commons, with access directly from one to the other.

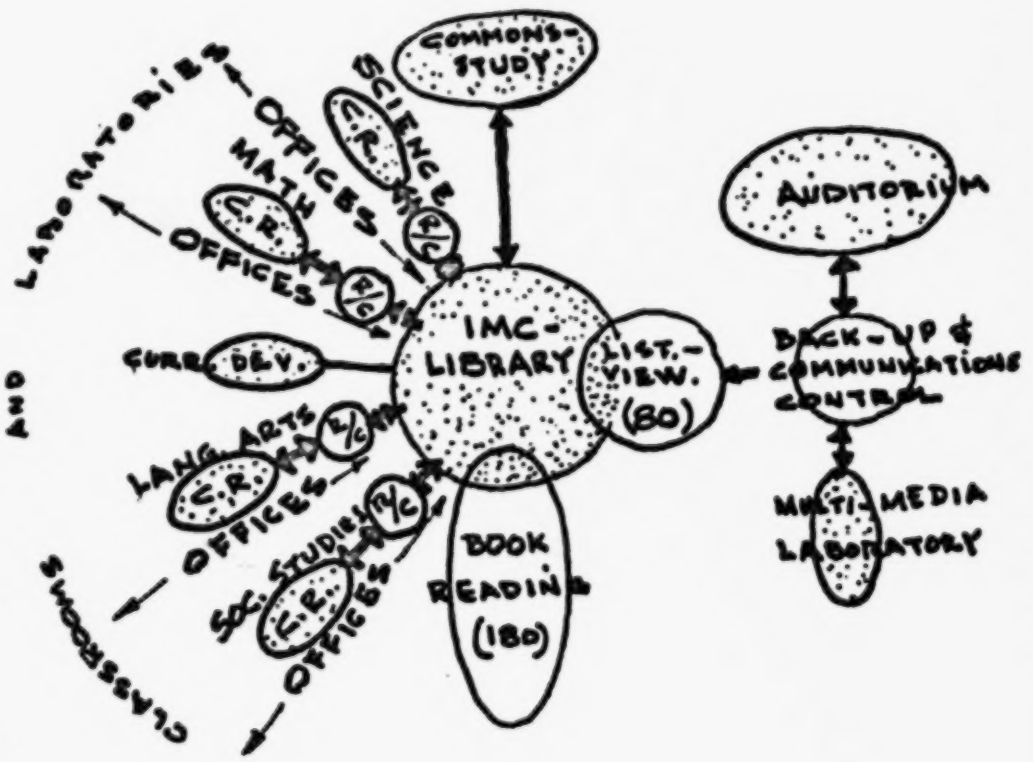
A view from the commons to exterior landscaped area should be provided, if possible, and student bulletin posting locations should be included at points of interest in the commons area. The top step of the "discussion area" should be raised above floor level. Some interior landscaping is desirable but should be restricted to large movable containers.

The floor surface in the commons area should be visually restful and informal in character, yet be capable of easy maintenance.

Locker space of approximately 5,000 s.f. for 1,800 lockers should be provided adjacent to both the commons area and main student entrance.

IMC - Library
(12,500 s.f.)

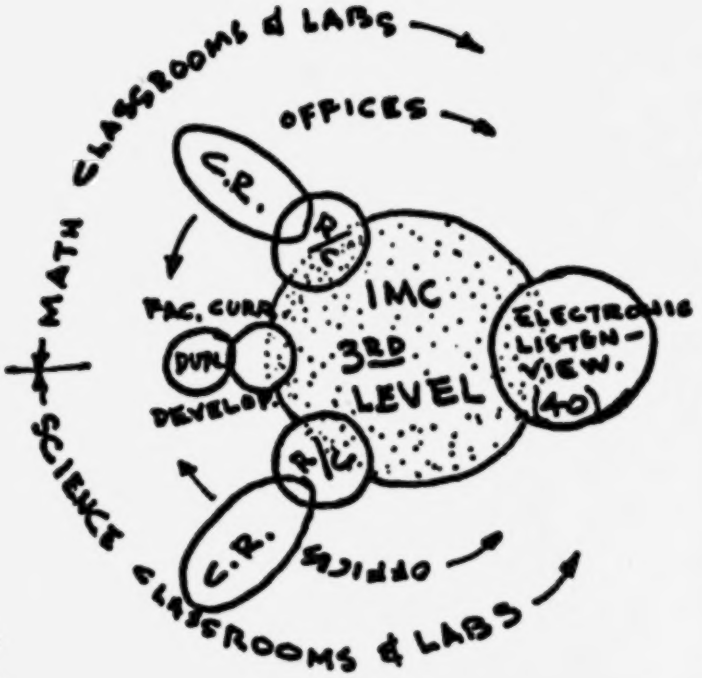
Into this unit are clustered a number of relatively distinct but interrelated activities. These activities include book and printed materials care, accounting, storage, use, circulation, individual and group study, faculty interdepartmental curricular and instructional planning and development, the use of non-print materials such as tapes, filmstrips and slides, and the immediate or potential use of machines such as typewriters, duplicators, tape and video tape recorders. The centralized IMC concept represents a commitment to plan for immediate and future use of the most advanced educational techniques available. It is intended that the IMC have the capability of tying in with computer facilities or closed-circuit educational communications centers located elsewhere to facilitate computer-aided instruction, information storage and retrieval, scientific calculations and data processing, dial-access educational TV programs and the like.

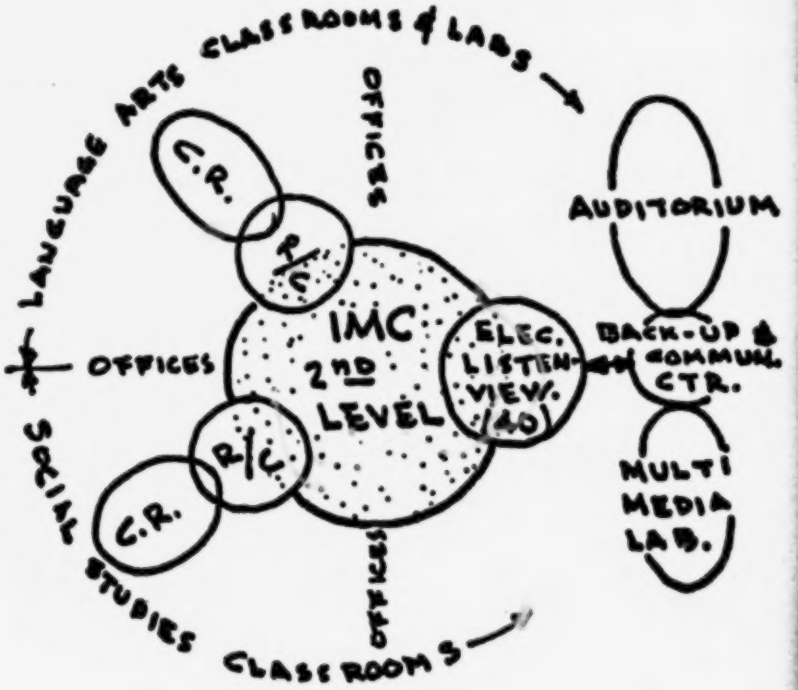


All classrooms and major group meeting spaces should be provided with conduit to receive future video cable and two-way audio communications to the communications control center. Eighty study carrels should be provided within the IMC for electronic listening-viewing. Conduit should be provided to the communications control center for installation of electronic hardware at a later date. The four resource centers, and the Faculty Curriculum Development room, should each be supplied with two study carrels, also capable of similar conversion at a future date.

A diagrammatic layout of functional relationships for the IMC-Library is shown on the preceding page. At the right are illustrations indicating how the functions might be related if the IMC-Library is separated into three floor levels. Vertical circulation would be required within the IMC-Library area.

The IMC-Library should be horizontally or vertically near the commons, the four resource centers, the auditorium, and the multi-media lab. Both horizontal and vertical circulation should be possible within this unit. The combined IMC-Library should seat from 240 to 260 students and provide book stacks for a library of 30,000 volumes. The library will be responsible for textbook storage and distribution in addition to normal library functions.





Multi-Media Instructional Center
(3,500 s.f.)

This unit should be located in the academic complex near the language arts, social studies, foreign language, and science departments and adjoining the rear of the auditorium projection booth. It should seat 240 persons and provide for multiple-screen projection equipment.

An electronic maintenance and repair room should be located adjacent to the multi-media back-up and communications control room. The Multi-Media Laboratory should seat approximately 250 students in a stepped-floor arrangement with continuous, table-type writing surface in front of each seat. This writing surface, like carrels, should be sloped (approximately 20° is optimum) with adjacent horizontal space for holding books and supplies. Seats should allow for freedom of body movement while sitting in a balanced body position.

INSTRUCTIONAL AND ADMINISTRATIVE FACILITIES

Administration
Art
Business and Distributive Education
Foreign Language
Guidance and Health
Homemaking
Industrial Arts
Language Arts
Mathematics
Music
Physical Education
Science
Social Studies
Special Education
Summary of Space Allocations
Teaching Stations

The following sheets represent summaries of physical space needs for the various departmental programs and administrative activities. Each summary sheet reflects the combined guidance of departmental representatives fully conversant with the conduct of such programs and city-wide concerns for needs of specialization and integration of special programs, adjusted as required to satisfy the building budget limitations.

It is expected that precise and final space allocations can be arrived at only by frequent dialogue between the architect and committee through the schematic and preliminary design phases. The space allocations represented in the following summaries must, therefore, be considered as approximate and flexible to achieve the best and most imaginative final design solution for the new high school.

Administration

This unit serves the entire student body and faculty. It is also the point of contact with the public. It consists of nine spaces or work areas as follows:

1.	Reception and waiting area for students, staff, and the public	200
2.	Three administrative offices (principal, vice-principal, and administrative assistant) without built-ins	320
3.	Conference room accessible from the suite or from the hallway, with acoustical isolation, to seat 12 persons	200
4.	Secretarial work area, with three stations and a file bank; an intercom partially isolated and a vault door in view; a window off the corridor or commons area that can be opened for student walk-up service	300
5.	Record storage room with combination lock door and high level of fire resistance	80
6.	Staff lounge equipped with sink and refrigerator; accessible from administrative suite or corridor	420
7.	Mail center (boxes) accessible from corridor, near staff lounge and removed from reception area	100
	TOTAL:	1,620

Art

This instructional unit should be located near the industrial arts area and equipped with full spectrum lighting and a large outside door accessible to trucks. It contains four spaces.

1.	Staff office and storage area for two, with glass partitions for viewing of classroom areas; include class project storage accessible to students	800
2.	An instructional space for graphics, design, drawing and painting, with a space divider separation of painting; contain in-room materials storage racks and cupboards, a sink, and ample counter space	1,200
3.	An instructional space for sculpture and ceramics; counter space, sink, and floor drain	600
4.	An instructional space for general crafts, with ample counter space, a sink, and electric outlets	600
	TOTAL:	**3,200**

Business and Distributive Education

This instructional unit should be located near a general use teaching station. It consists of six spaces which are accessible to one another.

1.	Work and storage area for six staff and one secretary; centrally located in the unit, with cabinet and file space for materials storage and records	400
2.	An instructional space for typing, with outlets to accommodate 60 pupil stations; arranged in clusters rather than rows to reduce the sense of size	1,800
3.	An instructional space for shorthand and advanced typing; each pupil station should provide dual function of shorthand reception (wireless receivers) and typing at two work levels, with outlets for transcribing from dictating machines	1,200
4.	A space for instruction in use of office duplicating equipment and machine card keypunch and sort; arranged to be accessible and used occasionally for related student and administrative activities; near an exit where a mobile computer classroom can be parked and provided with electric power	900
5.	An instructional space for bookkeeping and the use of related business machines; perimeter outlets for 12 machines and work area for manual bookkeeping	900
6.	A space for instruction in merchandising and retail sales, with a display window on the corridor and accessible from the classroom; in-room storage and work space for one staff	1,200
	TOTAL:	6,400

Foreign Language

This instructional unit should be located near the electronic communications control center. It consists of four spaces, with relocatable interior walls.

1.	Work, staff planning, and storage area for five teachers and one instructional secretary, with desk and file space for each of the six persons	500
2.	A "listen-respond-record" language laboratory containing 30 individual carrels and a control consolette linked with the communications control center; provide teacher platform	900
3.	Two "listen-respond" language laboratories, with 30 overhead recoil headphones and microphones; capable of being darkened easily for audio-visual presentations	1,800
	TOTAL:	3,200

Guidance and Health

This unit should be near and accessible from the administrative unit as well as from the corridor, but not give the appearance of being an integral part of the administrative suite. It consists of eight spaces.

1.	A combined reception room and secretarial office, with work and bank file space for one secretary, seating space for six persons, and display cabinets for magazines and books	360
2.	Four offices for counseling with phone jacks in each and vision strips in doors	400
3.	An isolated space for parent conferences accessible from reception room or corridor and containing no fixed equipment	140
4.	Two spaces of equal size for temporary accommodation of students who are ill, with a lavatory in each room	300
	TOTAL:	1,200

Homemaking

This instructional unit should be located near the art and industrial arts units. It should contain three areas of activity combined into one large space, with such partitions as are used of the snap-in or relocatable types.

1. A foods laboratory with space for four central core plug-in food preparation stations, each containing stove, refrigerator and sink; space for in-room storage of materials should be provided	1,000
2. A clothing and textiles laboratory, with space for eight standard sewing machines, storage of 12 portables, and tables for pattern work; accessible in the room should be tote-trays for 60 students and two fitting rooms; a small washer-dryer area with a vision screen; a display window in the corridor accessible from the laboratory	1,200
3. A family life area for use in child care instruction as well as for interior decoration and dining	600
TOTAL:	2,800

Industrial Arts

This instructional unit should be in a location having effective acoustical separation from the academic and administrative areas. It should contain six distinct areas of activity.

1.	An instructional area for drafting and graphics, with space for 40 drafting tables and duplicating machinery; a darkroom adjoining, with access also from the corridor; in-room storage in overhead cupboards; work space for two staff	2,400
2.	An instructional area for the fabrication of metals, with appropriate space for 40 students and two staff; three subareas are included, one for essential machine shop equipment, one for sheet metal work, and one for welding; each subarea should have at least half the number of machines required in a conventional curriculum, but no fewer than one	2,400
3.	An instructional area for the fabrication of non-metallic materials such as woods and plastics; with small multiples of essential machinery, as in #2 above; accommodating 40 students and two staff; having a 120 s.f. properly ventilated room adjoining for finishing	2,400
4.	An area for instruction in power mechanics (e.g., small engines and hydraulics), electricity (e.g., residential wiring), and electronics (e.g., kit assembly and TV repair); accommodating 40 students and two staff; a walled-off area with a glass panel, acoustical isolation, and proper ventilation for engine testing and analysis	2,400
5.	A general use instructional area for film viewing, testing, or related activity	800
6.	A planning and resource area for students and staff located centrally within the industrial arts suite	400
	TOTAL:	10,800

Language Arts

This instructional unit should be located in a complex of units including social studies, the IMC-Library, foreign language, and the multi-media instructional center. It should contain fourteen spaces.

1.	A planning and work area for 16 staff and two paraprofessionals, located near the center of this instructional unit; each staff person should have a desk and two-drawer file, preferably incorporated into the desk; suitable tackboard and materials storage space; four clusters of four work stations each; include a work counter, duplicator equipment space, and storage cabinet space	1,000
2.	Three clusters of four classrooms each, with movable interior walls (STC 40) so as to yield three through twelve instructional spaces; each cluster should accommodate 120 students	9,000
3.	A resource center, with spaces for 30 students, book shelves and two instructional secretaries; ample tackboard space; two seminar rooms of 100 s.f. each with glass panels; accessible to the instructional clusters described in #2 above and to the staff planning area, with the added provision of having a common wall (glass) with a classroom	1,200
	TOTAL:	11,200

Mathematics

This instructional unit should be located near the science area and multi-media instructional center. It should contain ten spaces.

1.	A work and planning space for six faculty and two paraprofessionals; including a desk and two-drawer file for each person, with chalkboard on one or two walls; accessible from the mathematics resource center and centrally located within the instructional spaces	700
2.	A cluster of instructional spaces with interior movable partitions (STC 40), providing one to four large or standard group spaces with a total capacity of 120 students. The movable partition surfaces should be capable of use as chalkboard	3,000
3.	A cluster of instructional spaces with interior movable partitions (STC 40), providing one to four standard or small group spaces with a total capacity of 48; the movable partition surfaces should be capable of use as chalkboard	1,200
4.	A resource center, with shelf storage of three-dimensional models, work space for an instructional secretary, and study area for 20 students; located near the docking area for the mobile computer facility	800
	TOTAL:	5,700

Music

This instructional unit should be located near the auditorium stage area and effectively separated acoustically from the academic and administrative areas. The best dimensional proportions for these spaces are $1 : \sqrt{2} : \sqrt{3}$. The unit should contain 24 distinct areas.

1.	Three staff offices, each accessible from one of the three group instruction areas; with glass partitions between the office and instructional area	450
2.	A space for group band instruction and practice, acoustically treated, with risers, chalkboard at the front, and two entry ways	1,800
3.	A space for group vocal instruction and practice, acoustically treated, with risers, chalkboard at the front, and two entry ways	1,200
4.	A space for small group and ensemble orchestral instruction and practice, acoustically treated, with risers	600
5.	An instrument storage area separated from the group instruction spaces but accessible without blocking or restricting ingress and egress; with open cubicle spaces	350
6.	Sixteen small group and individual instruction and practice spaces as follows: ten @ 50 s.f. each; four @ 75 s.f. each; two @ 100 s.f. each; each of these spaces should have a vision strip and be accessible from a court or corridor which does not interfere with student movement to and from the large group spaces	1,000
	TOTAL:	5,400

Physical Education

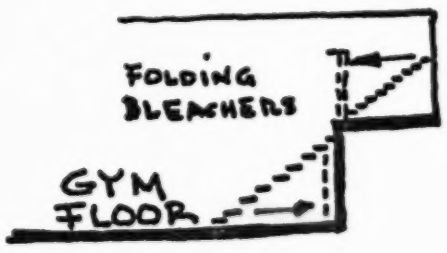
This instructional unit should be located near a public entryway and in such a way as to provide zone control of the unit for functions which do not affect the remainder of the facility. It should contain eight distinct areas of activity.

1. This area should be divided into two parts, each with a dressing room, an office for two staff with adjoining shower stall, a shower room with central or pillar-type gang showers, and space for storing equipment and uniforms; the dressing room should contain small and large lockers in an 18:1 ratio totaling 900 small lockers; this area should have separate entryways and be accessible from the swimming pool, gym, and special equipment rooms — 5,000

2. The swimming pool should be regulation Olympic length, width, and depth, and equipped for interscholastic competition in swimming and diving, with a length of 25 meters, a width of 15 meters, and varying in depth from 4 to 10 feet; the deck should be 10 to 12 feet wide; space on risers should be provided for 300 spectators — 10,000

3. The gymnasium should be divisible and have usable floor area that provides a regulation-sized basketball court in each half with folded bleachers at each end; the entire bleacher seating capacity should be 2,000 and based on 18" seat widths — 12,000

4. Two separate balcony areas off the gym approximately 40' wide, with bleachers folding toward the gym side of each balcony; each balcony area would be used as a teaching station for equipment or activities such as the following: tumbling, wrestling, golf driving cages, tennis serving cages, badminton, ping-pong, etc. — 7,200



5.	A special equipment area to accommodate a group of 30 students in limited movement physical activities such as weight lifting	1,500
6.	A general purpose instructional area for film viewing, testing; accessible to nearby instructional units	750
7.	An instructional area for driver education, with space for at least one simulator and work, display, and storage space for one faculty member	1,000
	TOTAL:	37,450

Science

This instructional unit should be located in the academic complex near the IMC-Library. It should comprise a suite of eight interconnecting areas.

1.	A centrally located planning, preparation, storage, and work area for six staff, with access to all areas of the instructional unit	1,200
2.	A biology laboratory, with 56 pupil stations of the island type with appropriate hardware and services, and with access to the animal room, greenhouse, resource center, central storage and staff planning area, special project room, and seminar rooms; special equipment would include a prefabricated biocenter and animal holding cage with auxiliary vent through the ceiling	1,800
3.	A biology special projects room, with storage cupboards and counter work stations for six students	250
4.	A combined physics-chemistry laboratory, with 56 pupil stations of the island type with appropriate hardware and services, and with access to the resource center, central storage and staff planning area, special projects room, and seminar rooms; an auxiliary exhaust fan system would be required in addition to a fume hood over a demonstration table located at the chemistry end of the laboratory	1,750
5.	A physics-chemistry special projects room, with storage cupboards and counter work stations for six students	250
6.	A cluster of four seminar rooms with interior relocatable walls	1,200
7.	A greenhouse with independent humidity and temperature controls, adjoining the biology lab and desirably visible from the corridor	250
8.	A resource center with work space for an instructional secretary, open storage of printed materials, and seating for 24 students individually and in small groups	800
	TOTAL:	7,500

Social Studies

This instructional unit should be located in the academic complex near the language arts unit, IMC-Library, and multi-media instructional center. It should contain fourteen spaces.

1.	Work and planning space for twelve staff, with desk and two-drawer file for each, storage cabinets, wall-mounted book shelves, and duplicating and copying machines	800
2.	Two clusters of instructional space, each with movable interior walls for conversion into one, two, three or four instructional stations	6,000
3.	A cluster of instructional spaces with movable and/or relocatable interior walls for conversion into one, two, three, or four instructional stations	1,200
4.	A resource center, with space for two instructional secretaries, cabinets for materials and periodicals, student seating, and tack board display; two seminar rooms of 100 s.f. each, with glass panels. Locate adjacent to a classroom and separate with glass wall	1,200
	TOTAL:	9,200

Special Education

This instructional unit consists of five spaces and should be in two separate locations. The three spaces assigned to mental retardation should be in one location in the academic complex and the other two in another location away from heavy traffic or activity.

1. Two instructional spaces, each equipped with a sink and counter	1,800
2. An interconnecting space for storage and special activity, having visual contact with both spaces in #1 above	200
3. Two interconnected, visually isolated, instructional spaces (400 s.f. each)	800
TOTAL:	2,800

Summary of Space Allocations
(in square feet)

Type of Space	Totals	Class-room	Resource Center	Staff Work and Planning	Storage
A. General Facilities					
1. Auditorium	12,500				
2. Commons	12,720				
3. IMC-Library	12,500				
4. Multi-Media Instructional Center	3,500				
TOTAL:	41,220				
B. Instructional - Administrative Facilities					
1. Administration	1,620			1,540	80
2. Art	3,200	2,400		400	400
3. Business and Distributive Education	6,400	6,000		300	100
4. Foreign Language	3,200	2,700		400	100
5. Guidance - Health	1,200			1,100	100
6. Homemaking	2,800	2,500		100	200
7. Industrial Arts	10,200	8,600		1,000	600
8. Language Arts	11,200	9,000	1,200	800	200
9. Mathematics	5,700	4,200	800	600	100
10. Music	5,450	4,600		450	400
11. Physical, Health, and Driver Education	37,450	32,450		4,250*	750
12. Science	7,500	5,500	800	600	600
13. Social Studies	9,200	7,200	1,200	700	100
14. Special Education	2,800	2,600		100	100
TOTALS:	107,920	87,750	4,000	12,340	3,830

*includes locker rooms

Teaching Stations*

Special Purpose Teaching Stations

Art	3
Business and Distributive Education	5
Foreign Language	3
Homemaking	3
Industrial Arts	4
Music	19**
Physical, Health, and Driver Education	7
Science	4
Special Education	2
	50

General Purpose Teaching Stations

Industrial Arts	1
Language Arts	12
Mathematics	8
Physical, Health, and Driver Education	1
Science	4
Social Studies	12
Special Education	2
	40

* with all movable walls extended
**16 are small practice rooms

OUTDOOR FACILITIES

and

SPECIAL CONSIDERATIONS

Outdoor Facilities

Included in the development of the site will be provisions for athletic fields, parking, and access roads and pedestrian walkways.

1. Athletic fields should be planned initially to include a 440 yard oval track, six paved and fenced tennis courts, and six sodded playing areas, three of which are standard softball diamonds with backstops and three of which are minimum length soccer or football practice fields.

2. Off-street parking should be planned for 300 vehicles located for ease of entrance to the building near areas which will have occasional public use, such as the auditorium or gymnasium.

3. The access roads and walkways should provide approaches to the building for such instructional units as industrial arts, art, and business education. The auditorium stage and commons vended food service areas should also be readily accessible to trucks, with a covered loading platform for vending trucks. The anticipated heavy school bus transportation will require the planning of special approaches to the commons area, with a covered loading dock of sufficient length to handle the loading of four to six buses simultaneously.

Special Considerations

It is appropriate to give special consideration to such matters of design as circulation, service systems (such as gas, electricity, and telephones), environmental energy surrounds (such as heat, light, and color), student lockers, toilets, and construction and equipment materials such as the finishing and/or covering of walls and floors.

1. Visual Openness

   The opening up of instructional units to include interior circulation simplifies somewhat the general problem of circulation or traffic in the building but makes it consequently a more critical concern. Insofar as possible, wherever acoustic isolation is required but visual separation is not necessary, transparent partitions of the floor to ceiling type should be used. Room arrangements in such spaces should orient student seating away from the transparent walls. Patternless fiberglass drapes should be incorporated where some visual obscurity is desired in areas such as administrative offices, health waiting, etc.

2. Corridors and Circulation

   The plans of the new school should be as compact as possible to facilitate minimum time required for students to get from one location to another between modules. The physical location of functions as expressed in the proximity requirements of the report should help reduce the time-distances involved. Omission of student lockers from all corridors is aimed at establishing and maintaining a study-type attitude in the academic areas. Doors to clusters of rooms should be recessed from the corridors to facilitate rapid movement without congestion. The corridors should be visually open on one side wherever possible to avoid an institutional tunnel effect. Corridor lighting should be of fluorescent type bulbs at the blue-white end of the spectrum with some variations in levels of lighting along each corridor.

3. Relocatable and Movable Walls

   It is desirable to use relocatable walls as interior partitions wherever possible throughout the building. This feature will enable the physical plant to be easily modified from year to year to accommodate future changes in curriculum and instructional methods. Movable (or folding) walls should be electrically operated and, like the relocatable walls, of a Sound Transmission Class of 40 or above.

4. Carpeting

The principal flooring surface throughout the building should be carpeting for maintenance and acoustic purposes. Its use must be restricted to classrooms, offices, the IMC-Library and the like, where indoor-outdoor traffic is at a minimum.

5. Exterior Glass

Exterior glass areas should be kept at a minimum where student study or staff work stations would be located near the exterior wall. Where such layout is required because of codes or other reasons, the window area must be of double-thickness insulating glass and planned for installation of white, patternless drapes of approximately 30% light transmission.

6. Furniture and Equipment

Appropriate furniture and equipment is considered to be the most critical factor affecting student and staff performance. It will be vitally important to select furniture with working surfaces, seating, color, and light contrasts which satisfy basic body alignment requirements, in addition to the usual considerations of maintenance, durability, and cost. Freedom for movement in a balanced body position is a more essential consideration than "comfort". This principle should be followed throughout--including selection of auditorium seating. Upholstered furniture for student use should be of a woven fabric rather than a sheet-material. Chalkboards should be selected from the mid-spectrum color range for maximum visual communication.

7. Toilets

The location and numbers of fixtures in various areas of the building will be dependent on occupancy functions and satisfaction of code requirements. The Guidance-Health area should be provided with a toilet room accessible from the health suite. The administrative and faculty lounge area should have two toilets for faculty use. Student toilets should be designed in such manner to minimize vandalism and nuisance activities as much as possible.

8. Color and Finishes

Visual variety within the limits of harmony is desirable in all areas of the building where individuals are not involved in sustained task activities. Variety is highly desirable in areas such as corridors, lounges, and the commons. The walls of classrooms, offices, and work areas should be selected of finishes not exceeding a 4 1/2:1 light contrast ratio with other elements in the room and be of a full spectrum color such as off-white or light tan. Patterns, if used, should be random--such as the grain of the lighter woods. Visual field contrasts for desk work should not exceed 3:1.

9. Illumination

Lighting sources in sustained task areas should not contrast sharply with other areas of the ceiling. Ideally the ceiling-luminaire light contrast ratio would not exceed 3:1 satisfied by dropped large area sources or indirect lighting fixtures. Warm-white tubes should be used in fluorescent fixtures in these rooms and run perpendicular to seating direction. Full-spectrum lighting (fluorescent plus incandescent) should be provided for areas requiring fine color discrimination such as art, home economics, and distributive education.

10. Acoustics

Applied sound absorbing materials should be omitted from all rooms receiving carpet excepting those containing high-level noise generators such as typewriters or business machines. Special consideration of acoustics will be required for music, commons, gym, and swimming.

11. Temperature

Zoned heating-cooling with integral humidity control should be provided for all areas of the building except the industrial arts shops. Air conditioning of the gym and swimming pool can be based on economics as an alternate to forced ventilation only. Full humidity control will be necessary to successfully diminish static electricity which would otherwise be associated with the carpeted areas. Normally excessive humidity in the shower-locker rooms and swimming pool area will deserve special design and equipment considerations.

12. General Considerations

Since the building will be large in volume and visually open inside, it will result in a form of interior living for the occupants. The architect and administration should do everything reasonably possible to provide the space with psychological satisfactions associated with exterior spaces. This can be accomplished through a liberal use of exterior materials on the inside, landscaped interior courts, and potted plant materials. The functional landscaping of the site is also an essential ingredient to successful functioning of the entire physical plant. Exterior lighting should be more "residential" in character than "institutional".

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